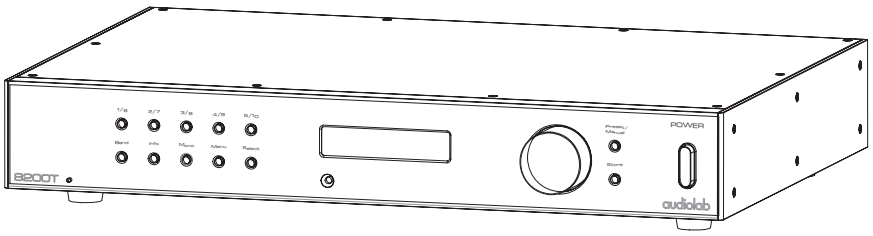
Service Manual

Electronics

8200T



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V01	2011.06.10	First Version

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Test conditions

1): Power supply voltage & Frequency (need to same as the product code)

CCC Type 220 V / 50 Hz .+/-10%

CE Type 230 V / 50 Hz .+/-10%

2): Temperature & Humidity

Temperature ..... 5 ~45 ℃

Humidity ..... 50 ~90 % RH

3):a. Set Volume at max

b.take on the EQ model

c. set the bass ,balance filter at no use model

d.take off the EQ model

4): test by atuo test system

1.FM Section

Frequency Range

CE&UL 87.5-108MHz Step 50KHz

	Measurement item	FREQ	Unit	Limit	Remarks
1	Usable sensitivity MONO IHF(3% THD)	98MHz	dBu	⩽18	
2	S/N RATIO MONO (60dBU IHF A wtd)	98MHz	dB	⩾72	
3	S/N RATIO STEREO (60dBU IHF A wtd)	98MHz	dB	⩾66	
4	MONO THD (60dBu IHF wtd) L=R,C=40KHz Dev	98MHz	%	0.4	
5	STEREO THD (60dBu IHF wtd) L=R,C=40KHz Dev	98MHz	%	0.6	
6	IF Rejection (10.7MHz) (ref to item1)	98MHz	dB	⩾70	
7	Image Rejection (119.4MHz) (refer to item1)	98MHz	dB	⩾40	
8	Frequency response 20Hz-15KHz (1KHz Ref, UL=75uS,CE=50uS)	98MHz	dB	⩽-3	
9	Channel Separation (60dBu IHF A wtd)	98MHz	dB	⩾32	
10	Alternate channel selectivity (+/400KHz,IHF)	98MHz	dB	⩾60	
11	FM output Level	98MHz	V	1.8 to 2.2	
12	Output DC offset	98MHz	mV	⩽3	
13	RDS decode sensitivity , 4% DEVIATION	57KHz	dBu	⩽32	

2.AM Section

Frequency Range

UL 530-1710KHz Step 10KHz

	Measurement item	FREQ(KHz)	Unit	Limit	Remarks
1	Usablesensitivity(400Hz,20 dB,direct input)	999/1000	dBuV	≤32	
2	S/N RATIO (5mV input)	999/1000	dB	≥38	
3	THD (5mV input)	999/1000	%	≤3	
4	Selectivity	999/1000	dB	≥17	
5	Output (30%,10mV)	999/1000	V	1 -1.5	
6	Frequency response 100-2.3KHz(400Hz,5mV)	999/1000	dB	+/-3	

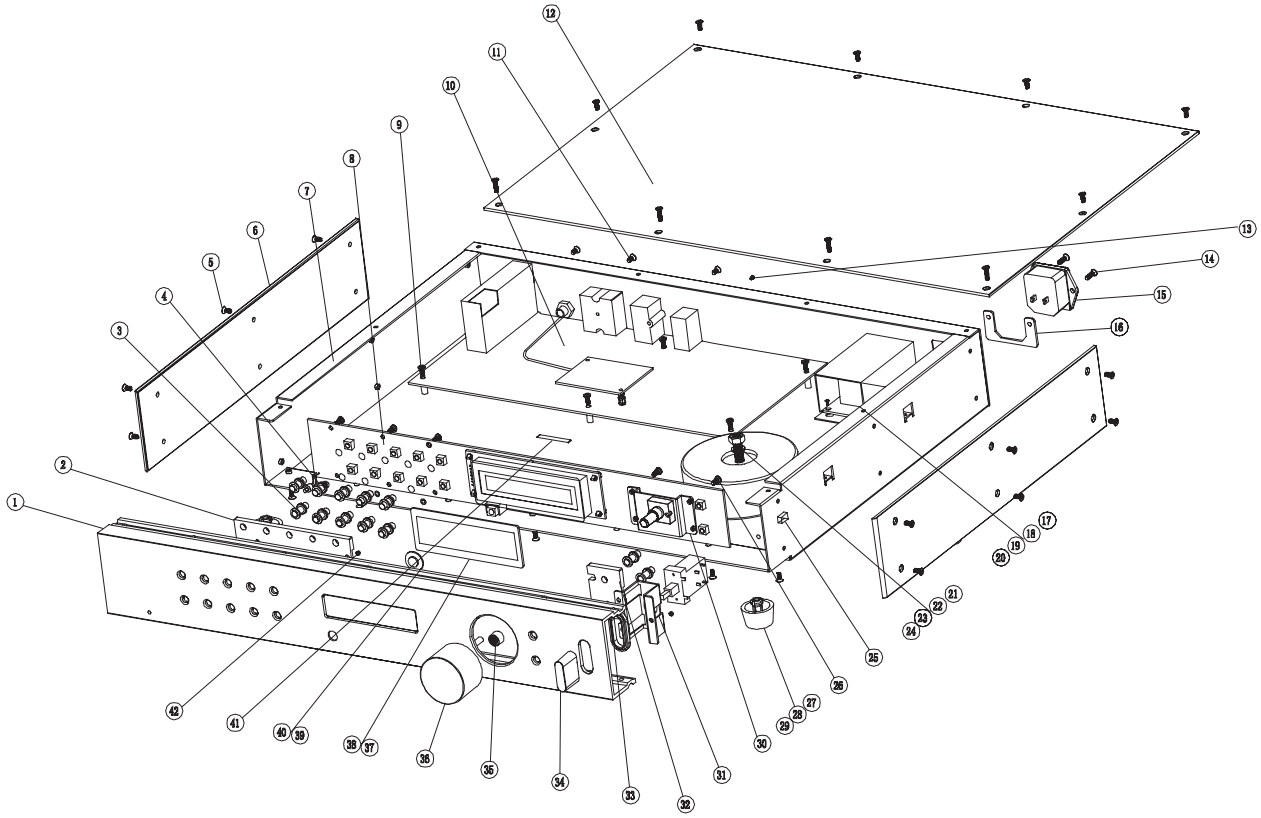
3.DAB Section

	Measurement item	Measurement condition	Unit	Limit	Remarks
1	Frequency response(42-20KHz)	Play G06P01T1.PLY 42HZ-20KHZ signal	dB	-3	
2	THD (1KHz)	Play G06P01T1.PLY, 1KHZ signal	%	0.2	
3	Output Level	Play G06P01T1.PLY, 1KHZ signal	V	1.4±0.2	
4	S/N	Play G06P01T1.PLY,1KHZ signal(OFF RF)	dB	≥65	
5	sensitivity	Play G06P01T1.PLY, 1KHZ signal	dB	≥80	
6	Channel Separation	Play G06P01T1.PLY, 1KHZ signal (OFF RF)	dB	≥60	

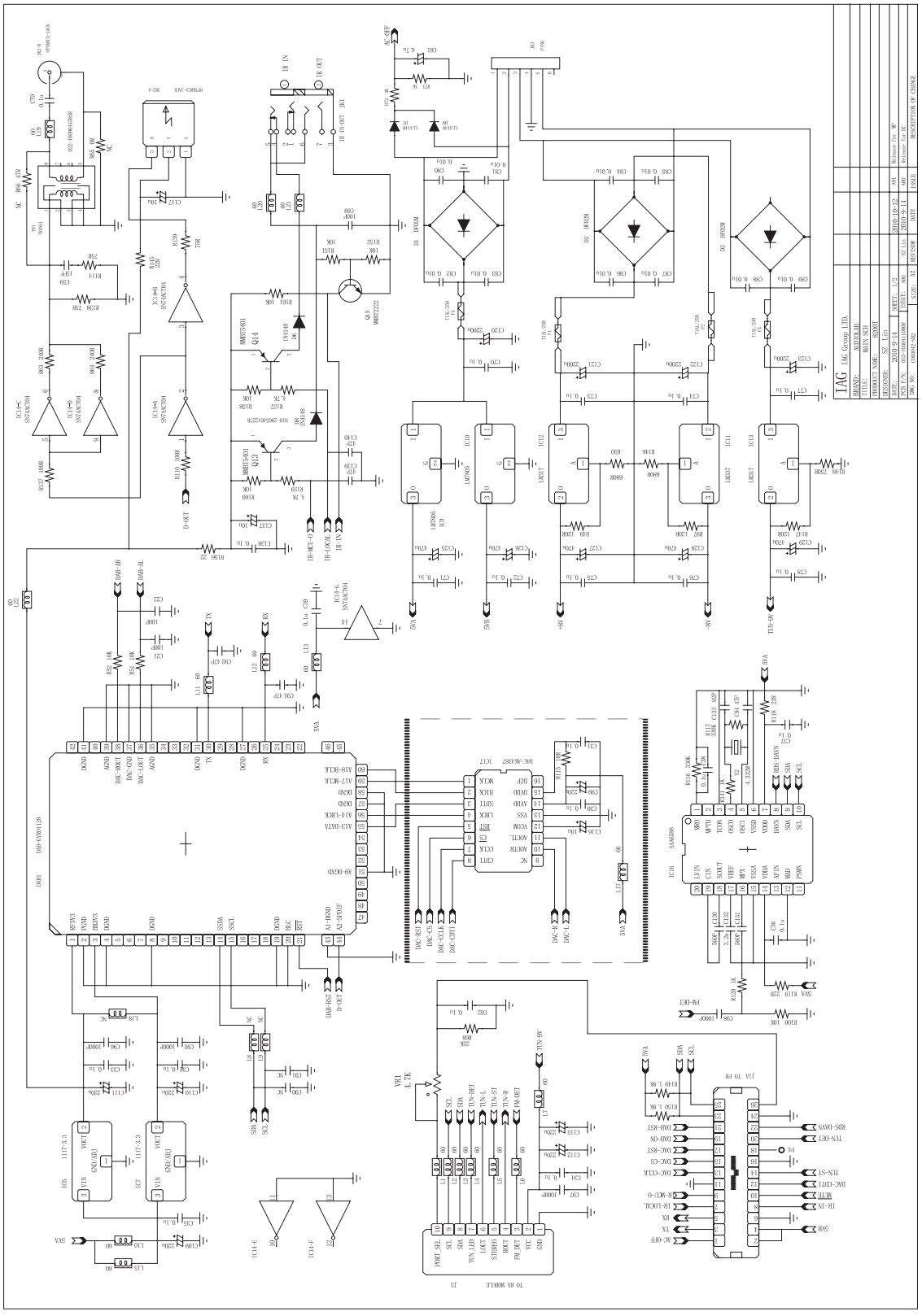
Functional

	Measurement item	Measurement condition	Unit	Limit	Remarks
1	Remote control distance	30℃	M	⩾5	
2	Operating voltage in range from AC voltage CE	AC230V	%	±10	
3	Operating voltage in range from AC voltage UL	AC120V	%	±10	
4	Operating Temperature		℃	0 to +45	
5	IR output voltage Level		V	2.8V to 3.5V	
6	IR accept input volaget Range		V	3 to 12	
7	COAXIAL output Level	75 OHM loading	V	0.5 to 1	
8	COAXIAL THD	1KHz	%	⩽0.2	

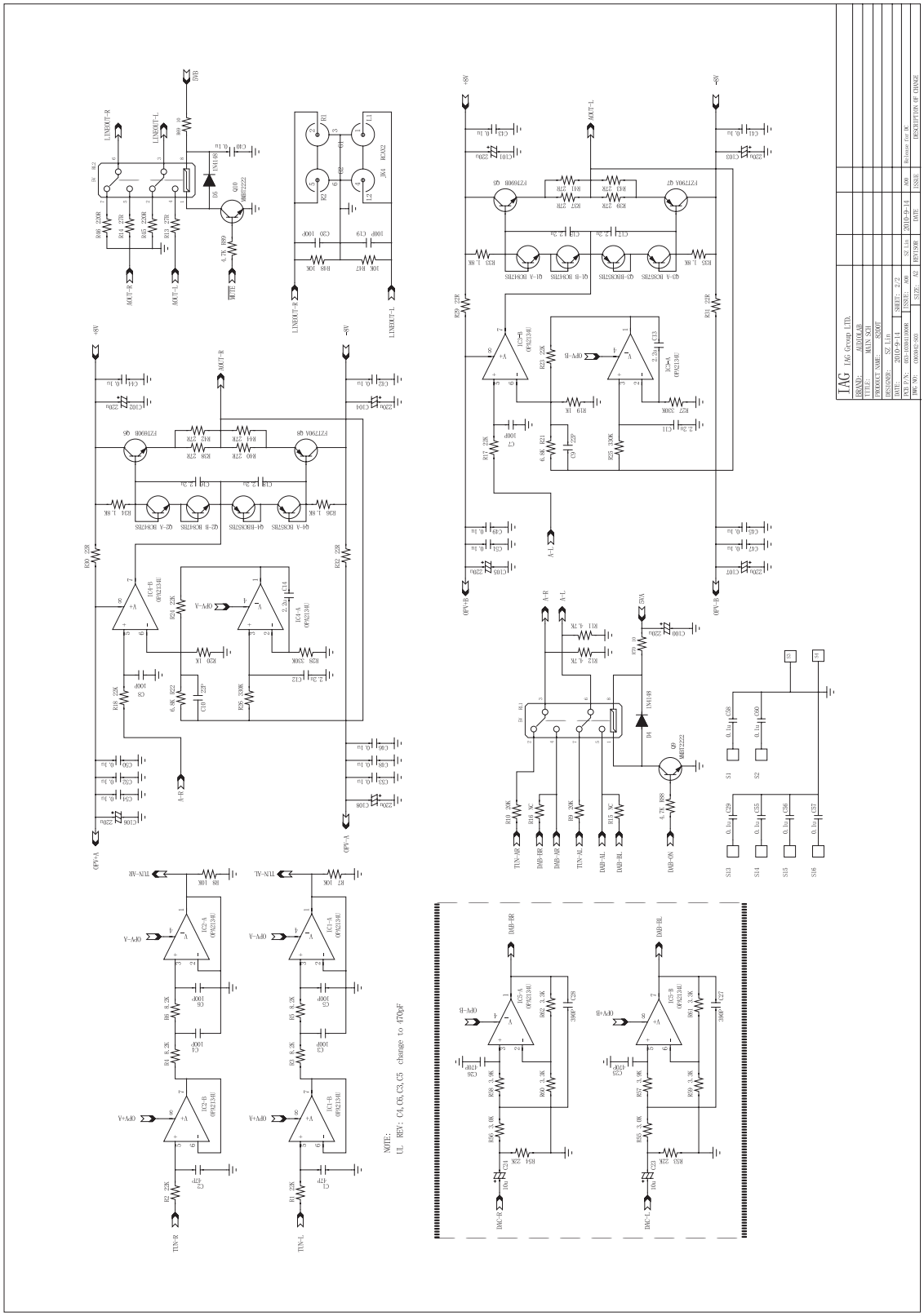
ASSEMBLY SKETCH



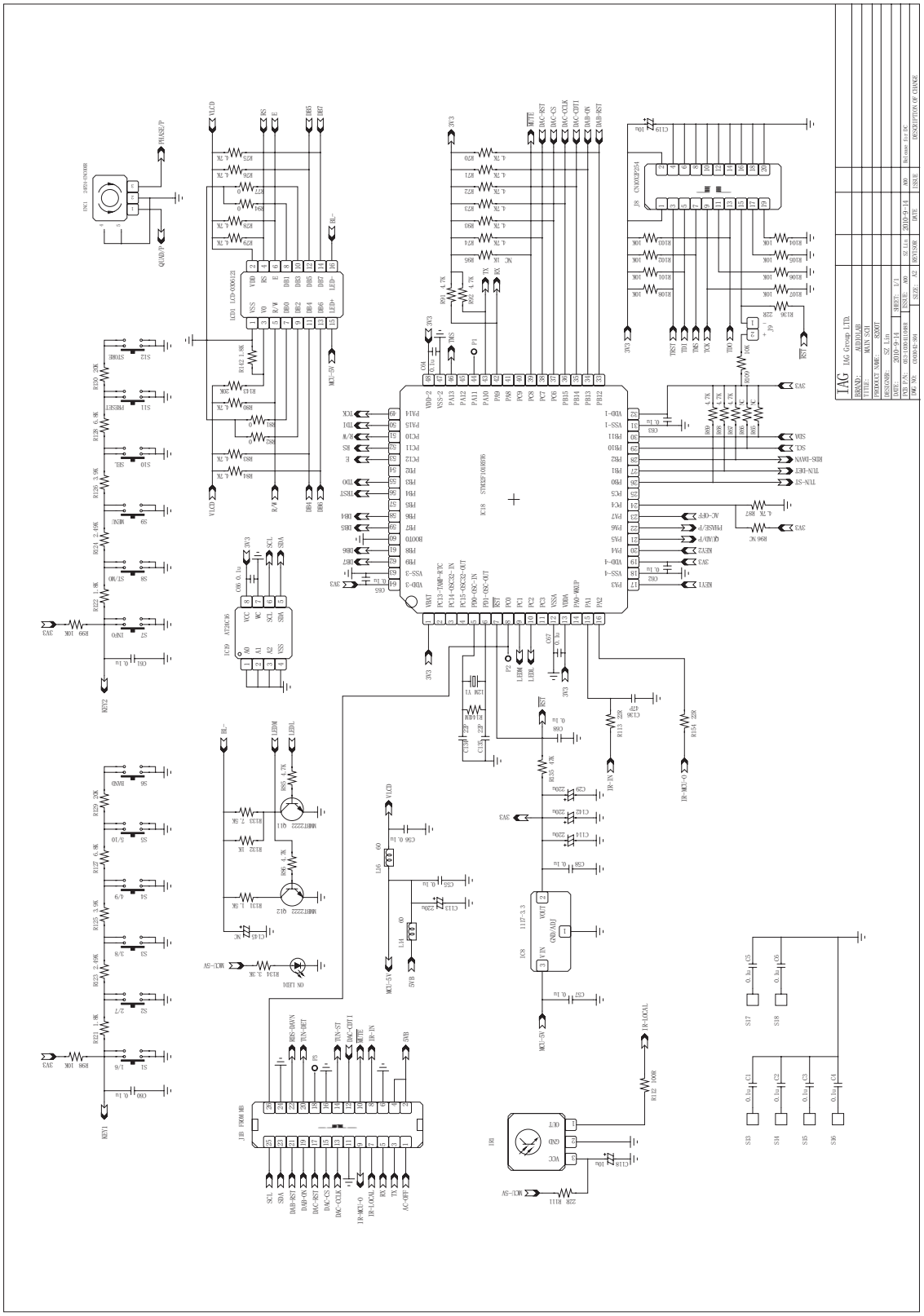
8200T-Mainboard-P1/2



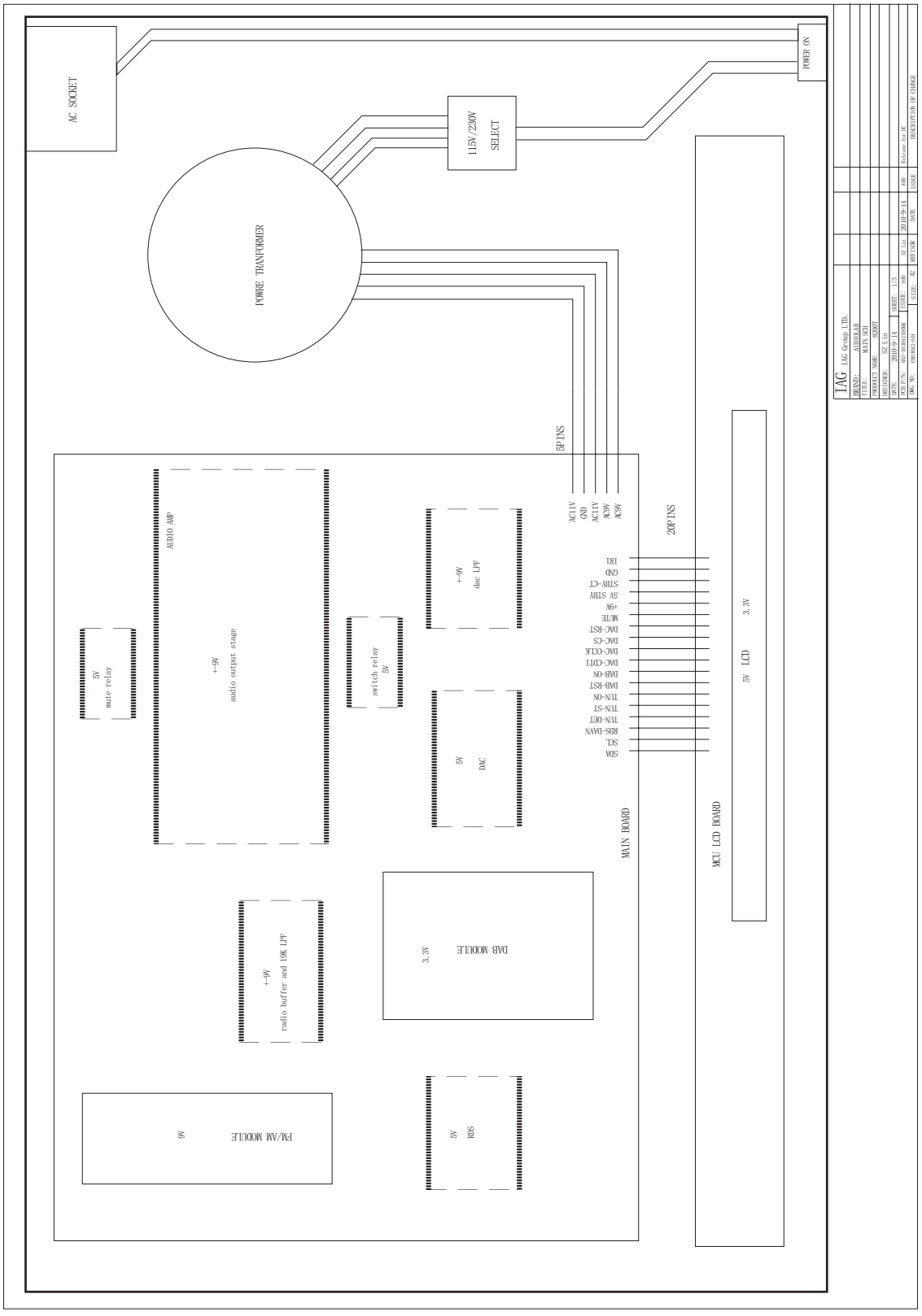
8200T-Mainboard-P2/2



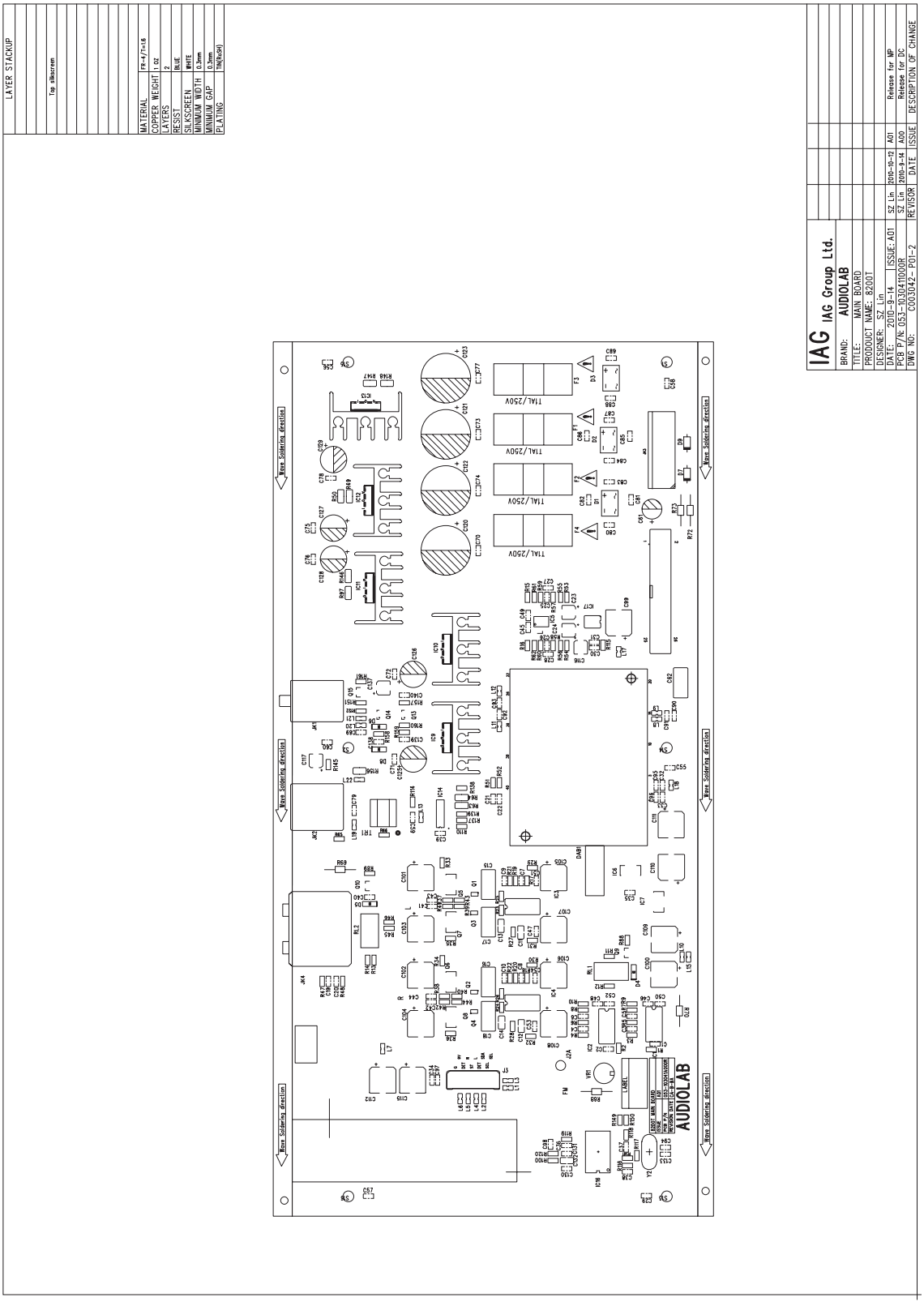
8200T Front Board-P1/1



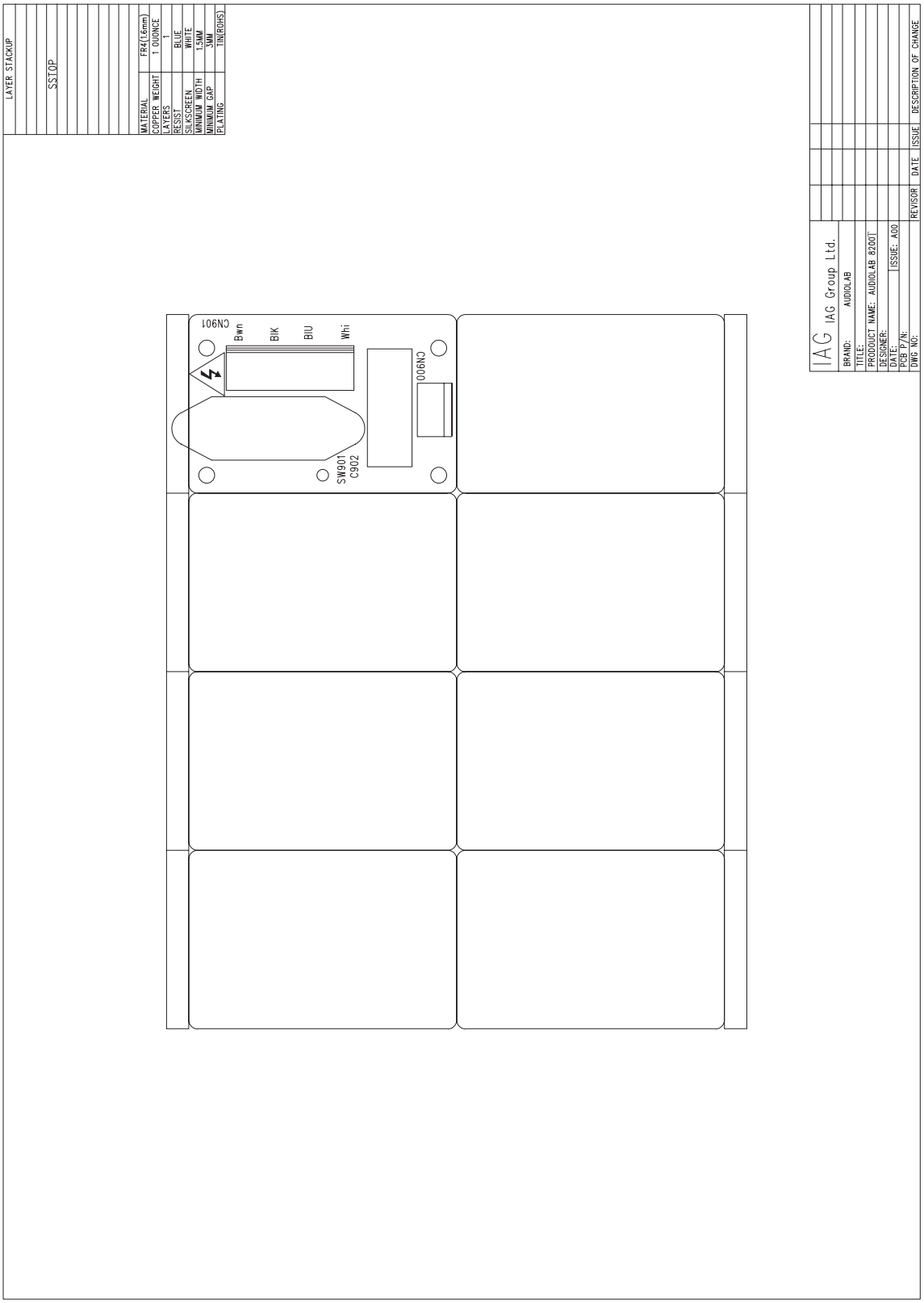
8200T Wiring Diagram-P1/1



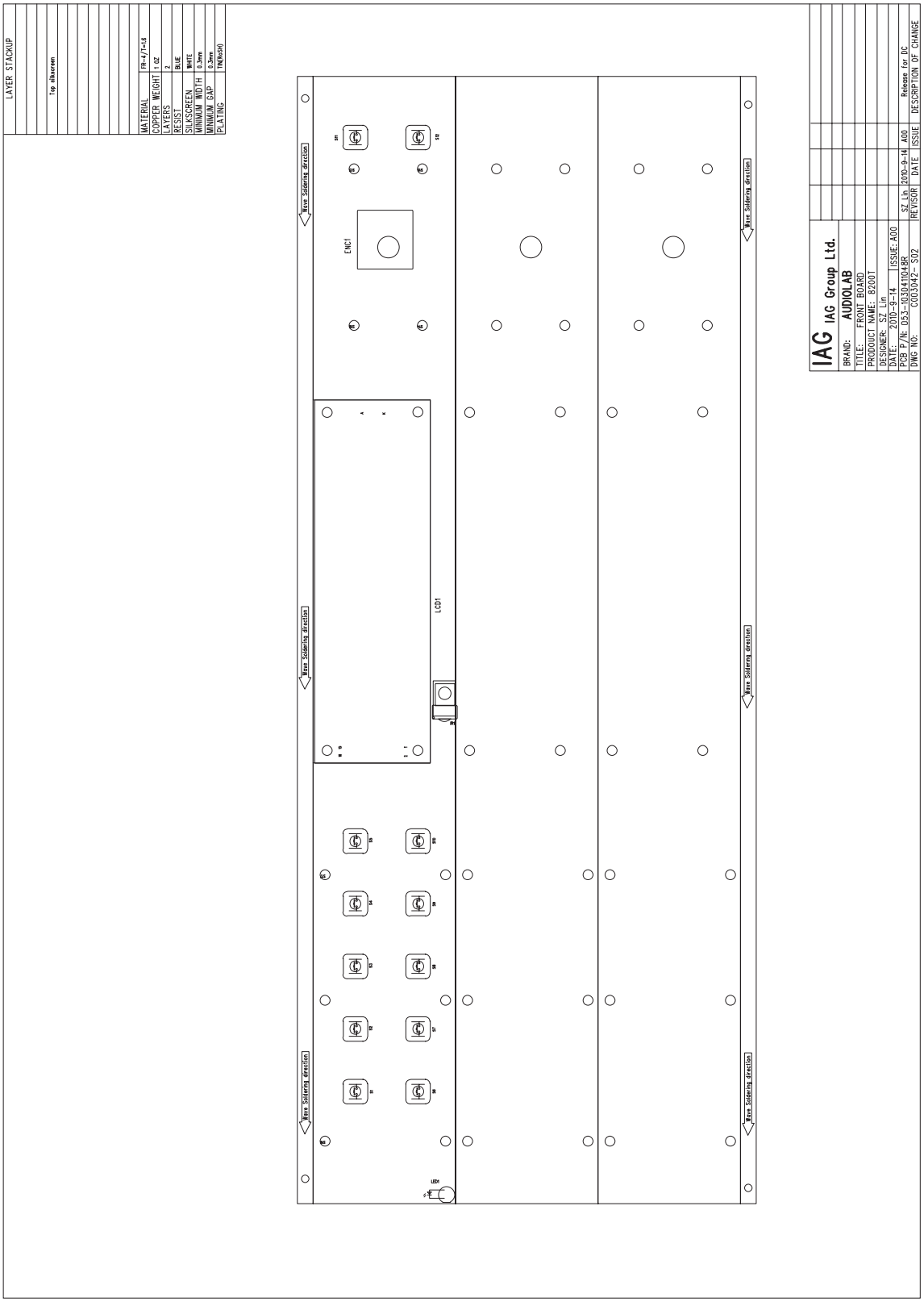
8200T-MainBoard Top Silkscreeen-P1/1



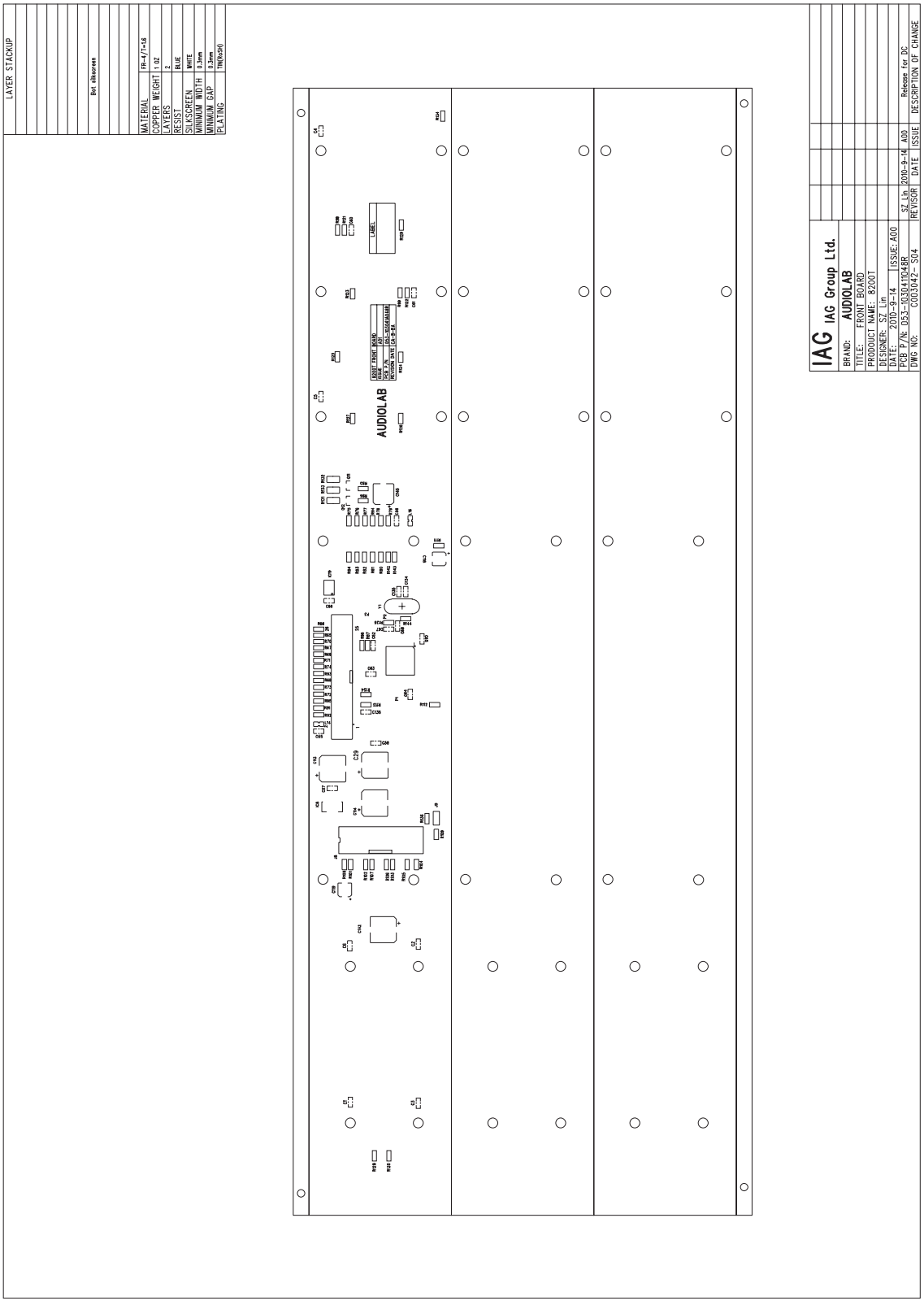
8200T Voltage Convert Silkscreeen-P1/1



8200T Front Board Top Silkscreeen-P1/1



8200T Front Board Bottom Silkscreeen-P1/1



8200T -Ageing test step-P1/1

1.Device connecting & setting

1):Plug the ageing test special power supply to the power socket on the rear panel of the unit.

2):Plug the Antenna of tuner in the jack of rear panel;

2.Ageing test

1):Press the power button on the panel of the unit,then the green LED will be lightened on.Adjust the frequence shown to be "FM 104.3Mhz". After this the output of the "OUTPUT" terminal on the rear panel will keep changing.running for 4hours.

2):keep the above testing conditions, check whether everything is normbal while and after the unit keepsrunning for 4hours.

3.Power off the unit after finishing the test.Do not forget to make a mark or label on the units which has already been tested,and then place them on the indicated zone for following tests.

8200T-Assembly Bom-P1/2

R/N	P/N	PART NAME	DESCRIPTION	QTY
1	300-1030410000R	Front Panel	finish and anodized	1
2	205-1030410001R	Button bracket	32*92*4 ABS	1
3	231-3007005102R	Rubber washer	Φ5*Φ7*1mm	12
4	340-1020410000R	Function button	painted	12
5	534-3002061006R	Screw	M3*6	19
6	319-1027410001R	Side panel	sand blasting ,anodized	2
7	604-1030410001R	Main chassis	painted and silkscreen	1
8	088-1030414001R	Front PCBA	PCBA	1
9	588-3000066037R	Screw	M3*6	14
10	088-1030410000R	Main PCBA	PCBA	1
11	524-2923090616R	Screw	ST2.9*9.5	2
12	302-1020410000R	Top cover	sand blasting ,anodized	1
13	524-2025050601R	Screw	ST2*5	1
14	534-3002100606R	Screw	M3*10	13
15	044-1700000000QR	AC socket	AC socket	1
16	308-1024000000R	Bracket	46.5*23.2*10mm T=1.6mm SECC	1
17	231-1152070054R	PC pad	70*152*0.5(Thickness)	1
18	223-0630120601R	Plastic post	TP-6	4
19	534-3002060021R	Plastic screw	M3*6	4
20	053-1020410152R	POWER PCBA	POWER PCBA	1
21	500-6010500300AR	Nut	M6	1
22	513-6412150780R	Washer	6.4*12*1.5	1
23	022-2000042360R	Power transformer	AUDIO LAB 8200T	1
24	231-2087007100R	Transformer Washer	Φ68	1
25	263-0020100102R	EVA	20*10*10	1
26	588-3000086037R	Screw	M3*8	4
27	226-1550830331R	Feet	Φ23*Φ19*13	4
28	226-0230001911R	Feet	Φ23.7*13.7*19.2	4
29	226-0080031911R	Feet Mainstay	Φ8.0*Φ3.7*19.0	4
30	305-1030410000R	Potentiometer Bracket	Painted	1
31	709-0011200020R	Mains Swicth Bracket	painted	1
32	242-1008010000R	Button Bracket	55.3*26.8*4mm	1
33	215-1027410001R	Platic Washer	painted	1

8200T-Assembly Bom-P2/2

R/N	P/N	PART NAME	DESCRIPTION	QTY
34	215-1027410000R	Power Button	painted	1
35	243-1009410000R	Plastic Washer	Φ6*Φ9*6.5*18	1
36	574-3002100803AR	Knob	paited Φ38	1
37	206-1020410000R	Display Window Glass	34*93*1.5 PMMA	1
38	111-0100183000R	Double-sideTape1	34*93*0.12	1
39	206-2024000001R	IR Display Window	D12*2.5	1
40	422-0150080102R	Double-sideTape2	D15*D8.5*0.12mm	1
41	071-0000000001R	Wires Clip	FCJ40	1
42	500-3050240300AR	Nut	M3	6

Remark:Colour DifferenceTable

R/N	P/N	PART NAME	DESCRIPTION	QTY
1	302-1030410000R	Front Panel	screened light grey(silver anodized)	1
	302-1030420000R		screened light grey(black anodized)	1
4	340-1020410000R	Function button	silver painted	12
	340-1020410001R		black painted	12
6	319-1027410000R	Side panel	silver painted	1
	319-1027420000R		black painted	1
7	604-1030410001R	Main chassis	silver painted	1
	604-1030420000R		black painted	1
9	534-3002061006R	Screw	M3*6NI	19
	534-3002060906R		M3*6 BLACK	19
11	524-2923090616R	Screw	ST2.9*7.5NI	1
	524-2923091016R		ST2.9*7.5 BLACK	1
12	302-1020410000R	Top cover	sand blasting ,anodized silver	1
	302-1020410001R		sand blasting ,anodized black	1
13	524-2025050601R	Screw	M2*5NI	1
	524-2023061001R		M2*6.5 BLACK	1
14	534-3002100606R	Screw	M3*10NI	13
	534-3002100906R		M3*10 BLACK	13
33	205-1027410001R	Platic Washer	silver painted(ABS757#)	1
	205-1027420001R		black painted(ABS757#)	1
34	215-1027410000R	Power Button	silver painted(ABS757#)	1
	215-1027420000R		black painted(ABS757#)	1
36	340-1030410000-1R	Knob	silver painted	1
	340-1030410001-1R		black painted	1

8200T -Electronic Bom-P1/6

R/N	P/N	PART NAME	DESCRIPTION	LOCATION	QTY
1	044-1700000000QR	Power Socket	MAINS INLET 2 POLE 2 FUSE LOCS		1
2	055-0326015128R	Flat Cable	UL2651#28*26P*250MM	J1A--J1B	1
3	017-1231000000R	Radio Module	MT004MS1-6D KSE		1
4	055-0010005255R	FFC Cables	10pin L=50mm，PH=1.25	J3	1
5	017-1362000000R	DAB Module	GyroSignal Gyro-1128	DAB1	1
6	053-1020410152R	Power Switch PCB	AUDIOLAB8200CD PCB 1 Layer FR4 1.6MM		1
7	060-4180310312R	Dual Jacket Wire	UL1672 18 AWG Blue L=310MM		1
8	060-4180310112R	Dual Jacket Wire	UL1672 18AWG Brown L=310MM		1
9	742-3501000000R	Heat Sinkable Tube	Φ35 Black	Power Socket	0
10	742-0151000000R	Heat Sinkable Tube	φ1.5 Black L=32MM	LED PINS	0
11	724-0353800000R	PET Knit Sleeve	φ 10.0,Diametre=0.25mm,ROHS		0
12	742-1001000000R	Heat sinkable tube	φ10 Black		0
13	071-0000000001R	Flat Cable Holder	FCJ-40		1
14	041-1376000000QR	Mains Switch	SWITCH MAINS 2P SDDSA 3289A	SW900	1
15	008-1003025005R	Capacitor	MKT 10NF/250V 10%	C900,C901	2
16	031-2200504121HR	Fuse	Fuse T1A/250V 213 Series 5*20MM LITTELFUSE	Power Socket	2
17	033-0050011302QR	AM Antenna	ANTENNA AM LOOP		1
18	812-1472180000R	RF Coaxial Connector	HC-004-014		1
19	036-1307015000R	Battery	1.5V 7-Size		2
20	846-0010000001R	Fuse Cap	FUSE-1 (20*11*6MM)		4
21	062-9118000220R	Mains Cable PHP-307 2PIN	H03VV-F3G0.75MM2		1
22	022-2000042360R	Transformer	115/230V Power=38W D=85MM H=38MM		1
23	055-0403015111R	Terminal Wire	3PIN PH=3.96MM L=150MM Blue and Brown		1
24	071-3200000000R	Tie Wrap	Black 200*2.2MM		5
25	088-1030414001R	8200T PCBA	8200T Front PCBA		1
26	056-4120001144R	Male Connector	20PIN 2.54MM Verical	J8	1
27	271-0260000000R	PCB Bracket	PCB Hole Size 2.5mm，PCB PH=6mm		2
28	271-0060000000R	PCB Bracket	LCI-5,White Nylon 66		4

8200T -Electronic Bom-P2/6

R/N	P/N	PART NAME	DESCRIPTION	LOCATION	QTY
29	030-6121000000-1R	LCD Display	BTC-2002K-GDWD-G-B-A01,20*2 Black Background and White Word，DFSTN	LCD1	1
30	057-2541222161R	Connector	PH=2.5MM Double Row16PIN	LCD1	1
31	039-3000000000R	Switch	TC-17XA 7.8*7.8*5 ROHS	S1-S12	12
32	044-2950000000R	Male Connector	2*13PIN PH=2。54MM	J1B	1
33	052-2100000000R	infrared receiver	TSOP4836	IR1	1
36	277-0120000000R	Reciever Socket	RCEA-5 NYLON66（UL）94V2 ,Black	1R1	2
34	059-1200001111R	Crystal	HC-49U 12.0M	Y1	1
35	019-0011022000QR	LED	LED RED	LED1	1
37	020-0002171113R	Encoder	24 Location	ENC1	1
38	007-4700051060R	Capacitor	47PF/50V 0603 5%	C136	1
39	017-3530000000R	IC	LM1117MPX-3.3/NOPB NS	IC8	1
40	017-1361000000R	IC	ST MCU STM32F101RBT6	IC18	1
41	017-3340000000R	IC	AT24C16（AT24C16AN-10SI-2.7）SO-8 ATMEL	IC19	1
42	007-1005079040R	Electrolytic Capacitor	10UF 25V ±20% Φ4*5.4mm	C118,C119	2
43	007-2209051060R	Capacitor	0603 22PF50V5% ROHS	C134,C135	2
44	002-1000011010R	Resistor	10K 1% 0603 50V	R98,R99,R101~109	11
45	002-1005031050R	Resistor	1M 0603 50V 5%	R144	1
46	002-1802011010R	Resistor	0603 1.8K F 1/16W	R121,R122,R142	3
47	002-2003021010R	Resistor	RES 20K OHM 1/10W 1% 0603	R129,R130	2
48	002-2492031010R	Resistor	0603 2.49K1/8W1%ROHS	R123,R124	2
49	002-3902031010R	Resistor	0603 3.9K1/8W1%ROHS	R125,R126	2
50	002-4703021010R	Resistor	0603 47K1/8W1%ROHS	R135	1
51	002-6802031010R	Resistor	0603 6.8K1/8W1%ROHS	R21,R22	2
52	035-6009031051R	Inductance	60 ohm/100MHz 0.5A 0603 BLM18PG600SN1X Murata	L14,L16	2
53	007-1001051060R	Capacitor	100NF 0603 10% Murata 25V	C1~C6,C55~C58,C60~68	19
54	002-1001021010R	Resistor	RES 100 OHM 1/10W 1% 0603	R112	1
55	002-2200021010R	Resistor	22R 0603 1/10W 1% ROHS	R111,R136,R113,R154	4
56	007-2203079030R	Electrolytic Capacitor	220UF 16V 8*6.2MM 20%	C113,C114,C142,C29	4
57	002-0000011050R	Resistor	0R 0603 5% 50V	R81,R82,R94,R77	4

8200T -Electronic Bom-P3/6

R/N	P/N	PART NAME	DESCRIPTION	LOCATION	QTY
58	002-3302061010R	Resistor	3.3K, 1%, 0603, 1/10W	R134	1
59	018-0002222227QR	Transistor	MMBT2222A NPN SMD SOT-23	Q12,Q11	2
60	002-4702021010R	Resistor	RES 4.7K OHM 1/10W 1% 0603	R67~76,R78~80,R83.R84 R85,R86,R87,R91~93	21
61	053-103041A048R	Front PCB	8200T Front PCB 2-Layer FR4 1.6mm 1OZ		1
62	002-8201032010R	Resistor	820Ω 1/8W 1% 0805	R131	1
63	002-1502032010R	Resistor	1.5K 1/8W 1%	R132	1
64	002-7501032010R	Resistor	750Ω 1/8W 1% 0805	R133	1
65	088-1030410000R	8200T PCBA	8200T Main PCBA		1
66	006-2224223043QR	Electrolytic Capacitor	CAP 2200U 20% 25V 7.5MM REJ	C120~123	4
67	006-4714081133HR	Electrolytic Capacitor	ELNA 470U 20% 16V RE3-16V471MG3 8*11.5mm	C125~129	5
68	034-3442000108R	Rectifier	DF02M	D1~3	3
69	017-1380000000R	IC	LM317T(1.5A) TO-220（ST）	IC12,IC13	2
70	017-1390000000R	IC	LM337T(1.5A) TO-220 Fairchild	IC11	1
71	017-7500000000R	IC	L7805CV +5v TO220 Brand:ST	IC9,IC10	2
72	537-3001080801AR	Screw	MP(+)3*8	IC9~13	5
73	312-1040000002R	Insulation Pad	TO-220	IC9~13	5
74	031-2200504122R	Fuse	1A 250V 5*20 UL	F1~4	4
75	013-2250120505QR	Polyester Capacitor	2U2 10% 50V MSK2 WIMA	C15~18	4
76	044-2950000000R	Male Connector	2*13PIN PH=2。54MM	J1A	1
77	051-1006334035-1R	RCA Jack	SOCKET 4WAY PHONO GOLD PLATED T6288-AABF	JK4	1
78	044-5690000000R	Optical Jack	Transmitter16Mbps Platted with Gold,RCA ,ROHS JST1583	JK2	1
79	044-4850000000R	Headphone Jack	Φ3.5 Stereo ROHS	JK1	1
80	044-4230000000R	FFC Connector	10P 180° PH=1.25MM Type B	J3	1
81	059-0043326117QR	Crystal	CRYSTAL4.332MHZ	Y2	1
82	024-1060101042R	Relay	AGN2004H Brand:NAIS	RL1,RL2	2
83	044-3400000000R	Connector	Socket 21PINS PH=2.0mm	DAB1	2
84	044-6350000000R	Connector	Socket 2×9PINS PH=2.0mm	DAB1	1
85	056-0106003300R	Male Connector	6PIN 3.96PH(Connect KAM-15-4)	JK3	1
86	017-1276000000R	IC	OPA2134PA 2X OP AMP DIP-8 Brand:TI	IC1~IC4	4

8200T -Electronic Bom-P4/6

R/N	P/N	PART NAME	DESCRIPTION	LOCATION	QTY
87	071-0010000002R	Wire Holder	Producion TYPE:MWS-7	J2A	1
88	604-1020410000R	Radiator	8200T	IC9~13	5
89	001-2203205010R	Resistor	Metal Film Registor 22K 1/4W F	R68	1
90	020-5022121317R	potentiometer	5K 25% BOURNS 3329H-1-502LF	VR1	1
91	067-1104148000R	Diode	IN4148	D7,D9	2
92	001-3002205010QR	Resistor	3K 1/4W 1%	R72,R73	2
93	006-4794051163HR	Electrolytic Capacitor	ELNA 4U7 20% 50V RE3-50V4.7ME3 5*11mm	C61	1
94	013-1040220509HR	Polyester Capacitor	100NF MKS2 10% 63V PH=5MM Brand：WIMA	C62	1
95	001-1000205010QR	Resistor	10R 1/4W 1%	R69,R70	2
96	277-0130000000R	Transistor Pad	TW-136	IC9~13	5
97	008-1002005015R	Capacitor	1NF-50V-10%	JK2	1
98	050-0100070211R	Fuse Hoder	FUC-2	F1~4	8
99	018-2905401227R	Transistor	2N5401S SOT-23 KEC	Q13.Q14	2
100	017-1004000000R	IC	SAA6588T SO-20 PHILIPS	IC16	1
101	017-3530000000R	IC	LM1117MPX-3.3/NOPB NS	IC6,IC7	2
102	017-9140000000R	IC	74ACT04SCX SOIC14 Fairchild	IC14	1
103	018-4500790224R	Transistor	FZT790A SOT-223 Zetex ROHS	Q7,Q8	2
104	018-4500690224R	Transistor	FZT690B SOT-223 Zetex ROHS	Q5,Q6	2
105	017-1092000000R	IC	BC847BS SOT-363 Philips ROHS	Q1,Q2	2
106	018-1023904227R	Transistor	PMBT3904 SOT-23 PHILIPS ROHS	Q9,Q10	2
107	007-2205052030R	Capacitor	2.2uF 16V 0805 10%	C11~14,C132	5
108	007-1002051063R	Capacitor	1nF 0603 50v 5% COG	C95~98	4
109	007-1003062090R	Capacitor	103/100V 0805 10%	C80~89	10
110	007-2209051060R	Capacitor	0603 22PF50V 5% ROHS	C9,C10	2
111	007-5601051031R	Capacitor	560pF 0603 16V NPO 5%	C130,C131	2
112	007-8200051041R	Capacitor	0603 82PF 25V J NP0	C133	1
113	002-1001011050R	Resistor	1K 0603 5% 50V	R19,R20,R120,R141	4

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R/N	P/N	PART NAME	DESCRIPTION	LOCATION	QTY
114	002-1000011010R	Resistor	10K 1% 0603 50V	R7,R8,R47,R48,R51,R52,R100,R160,R158,R161,R152,R151	12
115	002-1201032010R	Resistor	120Ω 1/8W 1% 0805	R49,R97,R147	3
116	002-1802011010R	Resistor	0603 1.8K F 1/16W	R33~36,R149,R150	6
117	002-2700061010R	Resistor	27R, 1%, 0603, 1/10W	R13,R14,R37~44	10
118	002-2203011050R	Resistor	22K 0603 5% 50V	R1,R2,R17,R18,R23,R24	6
119	002-3304061010R	Resistor	330K, 1%, 0603, 1/10W	R25~28,R116,R117	6
120	002-7501032010R	Resistor	750Ω 1/8W 1% 0805	R148	1
121	002-6801032010R	Resistor	680Ω 1/8W 1% 0805	R50,R146	2
122	018-0002222227QR	Transistor	MMBT2222A NPN SMD SOT-23	Q15	1
123	017-1093000000R	IC	BC857BS SOT-363 Philips ROHS	Q3,Q4	2
124	035-6009031051R	Inductor	60 ohm/100MHz 0.5A 0603 BLM18PG600SN1X Murata	L1~L7,L10~L13.L19~L22,L15	16
125	002-1001021010R	Resistor	RES 100 OHM 1/10W 1% 0603	R110,R137	2
126	002-2200021010R	Resistor	22R 0603 1/10W 1% ROHS	R29~32,R118,R119	6
127	002-2401022050R	Resistor	240Ω 5% 1/10W 0805	R63,R64	2
128	002-7500032010R	Resistor	75Ω 1/8W 1% 0805	R138,R114,R139	3
129	007-1500052060R	Capacitor	15PF 50V 5% NPO 0805	C59	1
130	007-2203079030R	Electrolytic Capacitor	220UF 16V 8*6.2MM 20%	C100~C112,C115	14
131	067-2204148110R	Diode	ST LL4148 SMD1206	D4,D5,D6,D8	4
132	007-1001051060R	Capacitor	100NF 0603 10% Murata 25V	C29.C32~C58,C60,C70~C79,C138	40
133	002-6802031010R	Resistor	0603 RES 6.8K1/8W1% ROHS	R21,R22	2
134	002-8202061010R	Resistor	8.2K, 1%, 0603, 1/10W	R3~R6	4
135	002-2003021010R	Resistor	RES 20K OHM 1/10W 1% 0603	R9,R10	2
136	002-0000011050R	Resistor	0R 0603 5% 50V	R65	1
137	002-4700021010R	Resistor	47R 0603 1/10W 1% ROHS	R66	1

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R/N	P/N	PART NAME	DESCRIPTION	LOCATION	QTY
138	007-1005079040R	Electrolytic Capacitor	10UF 25V ±20% Φ 4*5.4mm	C117,C137	2
139	007-1001051061HR	Capacitor	100PF 0603 50V NP0 ±5% KEMET C0603C101J5GAC	C69,C3,C4,C5,C6	5
140	007-4700051060R	Capacitor	47PF/50V 0603 5%	C92~94,C139,C140,C1,C2	7
141	007-1001031061R	Capacitor	0603 100P/50V 5% MURATA	C7~8,C19~22	6
142	002-2201021010R	Resistor	220R 0603 1/10W 1% ROHS	R45,R46	2
143	002-2200032050R	Resistor	22R 1/8W 0805 5%	R145,R156	2
144	002-4702021010R	Resistor	RES 4.7K OHM 1/10W 1% 0603	R11,R12,R88,R89,R157,R159	6
145	053-103041A000R	Main PCB	8200T Main PCB 2-LayerFR4 1.6mm1OZ		1
146	088-1020410400R	8200T PCBA	Voltage Convertion PCBA		1
147	053-1020410104R	Voltage Convertion PCB	AUDIOLAB8200CD/T Voltage Convertion PCB 1-Layer FR4 1.6MM		1
148	056-6104221120R	Socket	PH3.96 4P White H=14MM ROHS	CN901	1
149	043-0946700010R	115V/230 Converting Switch	T22205B	SW901	1
150	008-4704027505R	Capacitor	0.47uF /275V 10%	C902	1
151	056-0103003300R	Male Connector	2PIN 3.96PH(Connected KAM-15-5)	1	1

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